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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/656,709

09/07/2000

In-Sik Park

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04/07/2004

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EXAMINER

CHU, KIM KWOK

ART UNIT

PAPER NUMBER

2653

DATE MAILED: 04/07/2004

12

Please find below and/or attached an Office communication concerning this application or proceeding.

2

Office Action Summary

Application No.

09/656,709

Applicant(s)

PARK ET AL.

Examiner

Kim-Kwok CHU

Art Unit

2653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on Amendment filed on 9/25/03 (paper 9).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9,11-24,35,36 and 41-94 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9,11-24,35,36 and 41-94 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Final Rejection

1. This final rejection responses to the Amendment filed on September 25, 2003.

Response to Remarks

2. Applicant's Remarks filed on September 25, 2003 have been fully considered but they are not persuasive.

(a) Applicant states that the prior art of Ando fails to teach or suggest "a read-only lead-in area having first control information for both the read-only and writable storage areas" (page 19 of the Remarks, lines 4-6). Accordingly, the prior art of Ando (U.S. Patent 5,537,387) teaches the following features:

- (1) a CD lead-in region 34 (Fig. 4);
- (2) the region 34 is read-only (Fig. 4; CD is a read-only recording medium);
- (3) the region 34 having control information TOC data (Fig. 4, column 6, lines 34 and 35);
- (4) the TOC data contains control information such as recording positions, time codes etc. for the CD region 31 (Fig. 4; column 6 lines 35-41); and
- (5) the TOC data contains control information such as a time code TC mo-start indicating the start position of the MO lead-in region 36, a time code TC mo-data indicating the start

position of the MO data region 35 (Fig. 4; column 6, lines 42-44).

(b) The above TOC data is considered as Applicant's control information. And therefore, the prior art of Ando teaches Applicant's claimed feature "a read-only lead-in area having first control information for both the read-only and writable storage areas".

(c) Applicant states that claims 17, 18, 55 and 56 are rejected without providing any basis from a reference (page 24, lines 24-31). Accordingly, claims 17, 18, 55 and 56 are objected to as being dependent upon a rejected base claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless -
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

4. Claims 1, 5, 7, 8, 11, 15, 16, 35 and 36 are rejected under 35 U.S.C. § 102(b) as being anticipated by Ando (U.S. Patent 5,537,387).

Ando teaches an optical recording medium 30 having all of the elements and means as recited in claims 1, 5, 7, 8, 11, 15 and 16. For example, Ando teaches the following:

(a) as in claim 1, a read-only storage area 31 (Fig. 4);
(b) as in claim 1, a writable storage area 32 (Fig. 4);
(c) as in claim 1, a read-only lead-in area 34 having first control information for both the read-only area 31 and writable storage area 32 (Fig. 4; table 2 in columns 6 and 7; TOC in area 34 is the first control information; column 6, lines 34-50);

(d) as in claim 1, a writable lead-in area 36 having second control information relating to the writable storage area 35 (Fig. 4; table 2 in columns 6 and 7; TOC in area 36 is the second control information; column 7, lines 50-67);

(e) as in claim 5, the read-only lead in area 34 comprises hybrid identification information indicating that the optical recording medium 30 is a hybrid disc having the read-only storage area 31 and the writable storage area 32 (Fig. 4; table 2; column 6, lines 32-50; hybrid identification information such as index in subcode Q channel);

(f) as in claim 7, the writable storage area 32 comprises a control data zone 36; and the read-only lead-in area 34 comprises first physical format information of the read-only storage area 31 and second physical format information of the control data zone (Fig. 4; columns 6 and 7, table 2);

(g) as in claim 8, the first physical format information comprises reserved bytes which stores the second physical format information ((Fig. 4, columns 6 and 7, table 2);

(h) as in claim 11, the read-only storage area 31 and the read-only lead-in area 34 are compatible with a read-only memory (ROM) specification (Fig. 4; column 6, lines 22-24);

(i) as in claim 15, the read-only lead in area 34 comprises a control data zone which stores the first control information (Fig. 4; TOC data is the control information; column 6, lines 32-50); and

(j) as in claim 16, the first control information comprises physical format information for the read-only storage area 33;

hybrid disc identification information indicating that the optical recording medium is a hybrid disc having the read-only storage area 31 and the writable storage area 32; and physical format information for the writable storage area 32. (Fig. 4; columns 6 and 7, table 2).

5. Claims 35 and 36 have limitations similar to those treated in the above rejection, and are met by the reference as discussed above. The prior art of Ando also teaches the following:

(a) as in claim 36, the optical recording medium further comprises a first substrate having the read-only storage area 31 extending from the inner part the outer part of the first substrate (Fig. 4; CD area is made of a first substrate); and

(b) as in claim 36, a second substrate 32 attached (joined) to the first substrate 31, having a transparent region extending from an inner part to an outer part of the second substrate 32 (Fig. 4; MO area is made of a second substrate).

6. Claims 45, 46, 48, 52-54, 63, 66-68 and 73-75 are rejected under 35 U.S.C. § 102(b) as being anticipated by Ando (U.S. Patent 5,537,387).

Ando teaches an apparatus for recording and reproducing data onto/from an optical recording medium having all of the elements and means as recited in claims 45, 46, 48, 52-54 and 63. For example, Ando teaches the following:

(a) as in claim 45, a read-only storage area 31 at an inner part of the optical recording medium 30 (Fig. 4);

(b) as in claim 45, a writable storage area 32 at an outer part of the optical recording medium 30 (Fig. 4);

(c) as in claim 45, a system controller 19 which generates identification information (TOC subcode) to indicate that the optical recording medium is a hybrid disc having the read-only storage area and the writable storage area (Fig. 3);

(d) as in claim 45, a recording and/or reproducing unit 12 which records or reads data from the read-only storage area 31 and the writable storage area 32 based on the generated identification information which is stored in a lead-in area 34 of the read-only storage area 31 (Fig. 3);

(e) as in claim 46, the system controller 19 generates first control information (TOC in 34) for both the read-only and writable storage areas and second control information (TOC in area 36) relating to the writable storage area 32 (Fig. 4);

(f) as in claim 46, the recording and/or reproducing unit 12 records the first control information in the lead-in area 34 of the read-only storage area 31 and records the second control information in a lead-in area 36 of the writable storage area (Fig. 4; columns 6 and 7, table 2);

(g) as in claim 48, the first control (TOC in area 34) information comprises physical format information (addresses) of the read-only storage area 31 and physical format information of a control data zone of the writable storage area 32 (Fig. 4; columns 6 and 7, table 2);

(h) as in claim 52, the recording and/or reproducing unit 12 controls a reference linear velocity for reproducing the data in the read-only storage area 31 to be the same as a reference linear velocity of data at an innermost part of the writable storage area 32 (Figs. 3 and 4; column 9, lines 30-32; a reference linear velocity is a basic mode of rotating a recording medium);

(i) as in claim 53, the read-only lead-in area 34 comprises a control data zone which stores the first control information (Fig. 4; column 6, table 2);

(j) as in claim 54, the first control information comprises physical format information for the read-only storage area 31 (Fig. 4; columns 6 and 7, table 2);

(k) as in claim 54, hybrid disc identification (address) information indicating that the optical recording medium 30 is a hybrid disc having the read-only storage area 31 and the writable storage area 32 (Fig. 4; columns 6 and 7, table 2);

(l) as in claim 54, physical format information (addresses) for the writable storage area 32 (Fig. 4, table 2 in columns 6 and 7);

(m) as in claim 63, first control information for both the read-only and writable storage areas in the lead-in area 34 of the read-only storage area 31 and second control information relating to the writable storage area in a lead-in area 36 of the writable storage area 32 (Fig. 4, table 2 in columns 6 and 7); and

(n) as in claim 63, the recording and/or reproducing unit 12 for reading the first and second control information so that the system controller 19 causes the recording and/or reproducing unit to read the data from the read-only and writable storage areas based upon the first and second control information (Fig. 3).

7. Method claims 66-68 and 73-75 are drawn to the method of using the corresponding apparatus claimed in claims 45, 46, 48 and 52-54. Therefore method claims 66-68 and 73-75 correspond to apparatus claims 45, 46, 48 and 52-54 and are rejected for the same reasons of anticipation as used above.

8. Claim 65 is rejected under 35 U.S.C. § 102(b) as being anticipated by Ando (U.S. Patent 5,537,387).

Ando teaches an apparatus for reproducing data from an optical recording medium having all of the elements and means as recited in claim 65. For example, Ando teaches the following:

(a) as in claim 65, a read-only storage area 31 at an inner part and a writable storage area 32 at an outer part of the optical recording medium 30 (Fig. 4);

(b) as in claim 65, a reproducing unit 12 which reproduces data from the read-only storage area 31 and the writable storage area 32 (Fig. 3); and

(c) as in claim 65, a system controller 19 which controls a reference linear velocity of the reproducing unit 12 for reproduction of the data in the read-only storage area 31 to be the same as a reference linear velocity for reproduction of the data in an innermost part of the writable storage area 32 (Fig. 4, column 9, lines 31-33).

9. Claims 84-86 and 90 are rejected under 35 U.S.C. § 102(b) as being anticipated by Ando (U.S. Patent 5,537,387).

Ando teaches a method of reproducing data from an optical recording medium having all of the steps as recited in claims 84-86 and 90. For example, Ando teaches the following:

(a) as in claim 84, reproducing data from an optical recording medium having a read only storage area 31 at an inner part of the optical recording medium 30 (Fig. 4);

(b) as in claim 84, reproducing data from the optical recording medium having a writable storage area 32 at an outer part of the optical recording medium 30 (Fig. 4);

(c) as in claim 84, storing identification information stored in a lead-in area 34 of the read-only storage area 31 to indicate that the optical recording medium 30 is a hybrid disc having the read-only storage area 31 and the writable storage area 32 (Fig. 4; columns 6 and 7, table 2 is a list of identification information);

(d) as in claim 84, reading the identification information from the lead-in area 34 of the read-only storage area 31 (Fig. 3);

(e) as in claim 84, reading data from the read-only and writable storage areas based upon the identification information (Fig. 3);

(f) as in claim 85, the optical recording medium has a first control information for both the read-only and writable storage areas in the lead-in area 34 of the read-only storage area 31 and second control information relating to the writable storage area 32 in a lead-in area 36 of the writable storage area (Fig. 4, columns 6 and 7, table 2 is a list of identification information);

(g) as in claim 85, the reading of the identification information comprises reading the first and second control information (Fig. 3);

(h) as in claim 85, the reading of the data comprises reading the data from the read-only and writable storage areas based upon the first and second control information (Fig. 3; table 2 is a list of identification information);

(i) as in claim 86, the first control information comprises physical format information of the read-only storage area 31; and physical format information of a control data zone of the writable storage area 32 (Fig. 4; table 2 is a list of addresses having format information); and

(j) as in claim 90, controlling a reference linear velocity for reproducing data in the read-only storage area to be the same as a reference linear velocity of data at an innermost part of the writable storage area (Fig. 3; column 9, lines 29-32).

10. Claim 92 is rejected under 35 U.S.C. § 102(b) as being anticipated by Ando (U.S. Patent 5,537,387).

Ando teaches a method of reproducing data from an optical recording medium having all of the steps as recited in claim 84.

For example, Ando teaches the following:

(a) as in claim 92, read only storage area 31 at an inner part and a writable storage area 32 at an outer part of the optical recording medium 30 (Fig. 4);

(b) as in claim 92, reproducing data from the read-only storage area 31 and the writable storage area 32 (Fig. 3); and

(c) as in claim 92, controlling a reference linear velocity for reproduction of the data in the read-only storage area 31 to be the same as a reference linear velocity for recording or reproduction of the data in an innermost part of the writable storage area 32 (Fig. 3; column 9, lines 29-32).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 2, 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al. (U.S. Patent 5,537,387) in view of Kozuka et al. (U.S. Patent 6,466,735).

Ando teaches an optical disk very similar to that of the instant invention. For example, Ando teaches the following:

(a) as in claim 2, the read-only storage area 31 comprises read-only lead-in area 34 (Fig. 4);

(b) as in claim 2, a read-only memory (ROM) data area 33 (Fig. 4);

(c) as in claim 2, the writable storage area 32 comprises the writable lead-in area 36 (Fig. 4);

(d) as in claim 2, the writable lead-in area 36 comprises a connection zone to connect the read-only storage area 31 and the writable storage area 32 (Fig. 4, area 36 is connected between area 31 and 32);

(e) as in claim 2, a random access memory (RAM) data area 35 (Fig. 4; MO area 35 is considered as a random access memory);

(f) as in claim 3, the read-only lead in area 34 comprises hybrid identification information indicating that the optical recording medium 30 is a hybrid disc having the read-only storage area and the writable storage area (Fig. 4; table 2; column 6, lines 32-50; hybrid identification information such as index in subcode Q channel);

(g) as in claim 9, the writable storage area 32 comprises a control data zone 35 (Fig. 4); and

(h) as in claim 9, the read-only lead-in area 34 comprises physical format information (Table of Contents) of the read-only storage area 31 and physical format information of the control data zone (Fig. 4; table 2 listed in columns 6 and 7).

However, Ando does not teach the following:

(a) as in claim 2, a read-only lead-out area in the writable storage area.

Kozuka teaches the following:

(a) a read-only lead-out area in the writable storage area (Fig. 6; column 6, lines 48-52).

A disc's management information such as Table of Contents and sector defective addresses are stored in the inner side and outer side of a recording medium such as Kozuka's so that a user can not accidentally erase it. When there is an advantage of

separating a disc's management data and user data, it would have been obvious to one of ordinary skill in the art at the time of invention to reserve a lead-in and a lead-out area on Ando's disc similar to Kozuka's, because the reserve area such as the lead-out area can be used to store management information.

13. Claims 4, 6, 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al. (U.S. Patent 5,537,387) in view of Kozuka et al. (U.S. Patent 6,466,735).

Ando teaches an optical disc very similar to that of the instant invention. For example, Ando teaches the following:

(a) as in claims 4 and 6, a hybrid identification information comprises information indicating a presence or absence of the writable storage area (Fig. 4, columns 6 and 7, Table of Contents in table 2 includes the hybrid identification information).

However, Ando does not teach the following:

(a) as in claims 4, 6, 19 and 21, a part version indicating a version number of the optical recording medium;

(b) as in claim 19, the physical format information for the read-only storage area comprises book type information indicating that the optical recording medium is compatible with a digital versatile disk read-only memory (DVD-ROM) specification.

Kozuka teaches the following:

(a) a part version indicating a version number of the optical recording medium (column 7, line 36); and

(a) a book type information indicating that the optical recording medium is compatible with a digital versatile disk read-only memory (DVD-ROM) specification (Fig. 23, step S33; book type information is a program file such as the navigation file of the DVD-ROM).

Information or programs stored in a DVD disc such as Kozuka's can be renewed or updated. For the benefit of verifying the difference of stored information, it would have been obvious to one of ordinary skill in the art to include a version number of the disc similar to Kozuka's, because the version number can be used to alert a user when the disc is being edited/updated.

On the other hand, for navigating the contents of a data storage medium, it would have been obvious to one of ordinary skill in the art to replace Ando's storage medium with Kozuka's DVD-ROM disc, because the DVD-ROM type disc has a data storing specification which includes program titles and language choices. Such specification has a purpose of better file management so that the contents of the stored information can be viewed like a book.

14. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al. (U.S. Patent 5,537,387) in view of Kozuka et al. (U.S. Patent 6,466,735).

Ando teaches an optical recording medium very similar to that of the instant invention. However, Ando does not teach the following:

(a) as in claim 12, the disc is a DVD disc with DVD-ROM and DVD-RAM specifications; and

(b) as in claim 13, a minimum size of the writable storage area is at least as great as a size of a single zone defined by a digital versatile disc random access memory (DVD-RAM) specification.

Kozuka teaches the following:

(a) a DVD disc having a ROM layer and a RAM layer (Fig. 6);
and

(b) a minimum size of the writable storage area (physical RAM layer) is at least as great as a size of a single zone defined by a digital versatile disc random access memory (DVD-RAM) specification (Fig. 6; RAM physical layer contains at least one single zone).

Traditional optical storage medium such as Ando's magneto-optical disc suffers a slow read/write speed and moderate storage capacity. Hence, when there is a need for storing large amount of data in a compact size, it would have been obvious to one of

ordinary skill in the art at the time of invention to replace Ando's CD-magneto composite disc with Kozuka's hybrid DVD with DVD-ROM and DVD-RAM specifications, because the hybrid DVD disc has an advantage of high storage capacity and can read/write information in a high transfer rate.

15. Claims 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al. (U.S. Patent 5,537,387).

Ando teaches an optical disc very similar to that of the instant invention. However, Ando does not teach the following:

(a) as in claim 14, the read-only storage area has a start position at a diameter of approximately 48mm, and an ending position at a diameter greater than the approximately 48mm. and less than approximately 116mm if the optical recording medium has a diameter of approximately 120mm, and has the start position at a diameter of approximately 48mm, and an ending position at a diameter greater than the approximately 48mm and less than approximately 76mm if the optical recording medium has a diameter of approximately 80mm; and the writable storage medium is arranged in a remaining area of the optical recording medium which does not contain read-only data.

With respect to the starting and ending of the read-only region, it is not novel. Depending on the usage of the optical disk such as for storing programs such as multimedia information

or for storing back up data, it would have been obvious to one of ordinary skill in the art at the time of invention to optionally design the size of the read-only area and the writable storage area so that the disk can be best suitable for either storing video programs or erasable information.

16. Claims 20, 22, 57, 58, 59, 79 and 81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al. (U.S. Patent 5,537,387) in view of Kozuka et al. (U.S. Patent 6,466,735).

Ando teaches an optical disc very similar to that of the instant invention. However, Ando does not teach the following:

- (a) as in claims 20, 22, 57, 58 and 79, a part version indicating a version number of the optical recording medium;
- (b) as in claims 20, 22, 57, 58 and 79, the physical format information for the read-only storage area comprises book type information indicating that the optical recording medium is compatible with a digital versatile disk read-only memory (DVD-ROM) specification.

Kozuka teaches the following:

- (a) a part version indicating a version number of the optical recording medium (column 7, line 36); and
- (b) a book type information indicating that the optical recording medium is compatible with a digital versatile disk read-only memory (DVD-ROM) specification (Fig. 23, step S33; book

type information is a program file such as the navigation file of the DVD-ROM).

Both Ando and Kozuka do not teach the following:

(a) as in claims 20, 57 and 79, the book type information and part version information area stored in byte 0 of the first control information; and

(b) as in claims 22, 59 and 81 the existence information and the part version information are stored in bytes 17 and 18 of the physical format information.

Information or programs stored in a DVD disc such as Kozuka's can be renewed or updated. For the benefit of verifying the difference of stored information, it would have been obvious to one of ordinary skill in the art to include a version number of the disc similar to Kozuka's, because the version number can be used to alert a user when the disc is being edited/updated.

On the other hand, for navigating the contents of a data storage medium, it would have been obvious to one of ordinary skill in the art to replace Ando's storage medium with Kozuka's DVD-ROM disc, because the DVD-ROM type disc has a data storing specification which includes program titles and language choices. Such specification has a purpose of better file management so that the contents of the stored information can be viewed like a book.

With respect to the addresses of book type information and

part version in the control information, it is not novel. In other words, in order to recognize the book type and its version, of a disc, it would have been obvious to one of ordinary skill in the art at the time of invention to optionally specify the addresses of control information such as book type and its version in a beginning address of a lead-in area so that these information can be accessed early during the control information reading stage.

17. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al. (U.S. Patent 5,537,387) in view of Mine (U.S. Patent 6,243,338).

Ando teaches an optical disc very similar to that of the instant invention. For example, Ando teaches the following:

(a) as in claims 23 and 24, a connection zone which connects the read-only storage area and the writable storage area (Fig. 4; area 36 is the connection zone).

However, Ando does not teach the following:

(a) as in claims 23 and 24, at least one defect management zone, and a drive test zone.

Mine teaches at least one defect management zone (DMA 1&2) and a drive test zone (Fig. 2; column 6, lines 1-8).

A rewritable storage medium has defective data sectors caused by occasional bad recording surfaces and scratches on the

storage area. Therefore, it is necessary for a rewritable disc to prepare a list of bad sectors during a write-test process in order to verify whether a recording sector is good or bad.

Hence, it would have been obvious to one of ordinary skill in the art at the time of invention to include defect management zone and drive test zone in Ando's lead-in area similar to Mine's, because by including the defect management zone and drive test zone in Ando's lead-in area, the reading/writing of data from/on a sector without knowing its condition before can be prevented.

18. Claims 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al. (U.S. Patent 5,537,387) in view of Kozuka et al. (U.S. Patent 6,466,735).

Ando teaches an optical disc very similar to that of the instant invention. For example, Ando teaches the following:

- (a) as in claim 41, a read-only storage area 31 having a lead-in area 34 and a data area 33 (Fig. 4);

- (b) as in claim 41, a writable storage area 32 having a lead-in area 36 and a data area 35 (Fig. 4);

- (c) as in claim 41, the lead-in area 34 of read-only storage area 31 comprises physical format information for the read-only storage area 31 and the writable storage 32 (Fig. 4; column 6, lines 34-50); and

(d) as in claim 42, the lead-in area 34 of the read-only storage area 31 comprises hybrid disc information indicating whether the writable storage area exists (Fig. 4; TC_{mo-start}; column 6, lines 34-50).

However, Ando does not teach the following:

(a) as in claim 41, the disc is a DVD disc.

Kozuka teaches a DVD disc having a ROM layer and a RAM layer (Fig. 6).

Traditional optical storage medium such as Ando's magneto-optical disc suffers a slow read/write speed and moderate storage capacity. Hence, when there is a need for storing large amount of data in a compact size, it would have been obvious to one of ordinary skill in the art at the time of invention to replace Ando's CD-magneto composite disc with Kozuka's hybrid DVD with DVD-ROM and DVD-RAM specifications, because the hybrid DVD disc has an advantage of high storage capacity and can read/write information in a high transfer rate.

19. Claims 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al. (U.S. Patent 5,537,387) in view of Kozuka et al. (U.S. Patent 6,466,735) and Mine (U.S. Patent 6,243,338).

Ando teaches an optical disc very similar to that of the instant invention. For example, Ando teaches the following:

(a) as in claims 43 and 44, the lead-in area 36 of the writable storage area 32 comprises physical format information for the writable storage area (Fig. 4; columns 6 and 7, table 2); and

(b) as in claims 43 and 44, including a connection zone which connects the read-only storage area and the writable storage area (Fig. 4; TOC indicates recording positions; column 7, lines 51-54).

However, both Ando and Kozuka do not teach the following:

(a) as in claims 43 and 44, at least one defect management zone, and a drive test zone.

Mine teaches at least one defect management zone (DMA 1&2) and a drive test zone (Fig. 2; column 6, lines 1-8).

A rewritable storage medium has defective data sectors caused by occasional bad recording surfaces and scratches on the storage area. Therefore, it is necessary for a rewritable disc to prepare a list of bad sectors during a write-test process in order to verify whether a recording sector is good or bad.

Hence, it would have been obvious to one of ordinary skill in the art at the time of invention to include defect management zone and drive test zone in Ando's lead-in area similar to Mine's, because by including the defect management zone and drive test zone in Ando's lead-in area, the reading/writing of data from/on a sector without knowing its condition before can be prevented.

20. Claims 47, 49, 61, 62, 70, 82, 83, 88 and 91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al. (U.S. Patent 5,537,387) in view of Mine (U.S. Patent 6,243,338).

Ando teaches an optical disc very similar to that of the instant invention. For example, Ando teaches the following:

(a) as in claim 47, the second control information 36 comprises a connection zone (lead-in area) to connect the read-only storage area 33 and the writable area 35 (Fig. 4; TOC indicates recording positions on both recording areas; column 7, lines 51-54);

(b) as in claims 49 and 70, reproducing and/or reproducing unit 12 reads the physical format information for the read-only storage 31 area and the writable storage area 32 to reproduce data in the read-only storage area 31 and the writable storage areas 32 respectively; (Figs. 3 and 4);

(c) as in claims 47, 49, 61, 62 and 70, reads the connection zone (Figs. 3 and 4, reading lead-in area 36); and

(d) as in claim 70, a connection zone 36 to connect the read-only storage area 31 and the writable storage 32 (Fig. 4).

However, Ando does not teach the following:

(a) as in claim 47, 49, 61 and 62, at least one defect management zone, and a drive test zone; and

(b) as in claim 49, read defect management zone and drive test zone to control the data in the writable storage area.

Mine teaches reading of at least one defect management zone (DMA 1&2) and a drive test zone in a Lead-in (Fig. 2; column 6, lines 1-8).

A rewritable storage medium has defective data sectors caused by occasional bad recording surfaces and scratches on the storage area. Therefore, it is necessary for a rewritable disc to prepare a list of bad sectors during a write-test process in order to verify whether a recording sector is good or bad.

Hence, it would have been obvious to one of ordinary skill in the art at the time of invention to include defect management zone and drive test zone in Ando's lead-in area similar to Mine's, because by including the defect management zone and drive test zone in Ando's lead-in area, the reading/writing of data from/on a sector without knowing its condition before can be prevented.

21. Method claims 82, 83, 88 and 91 are drawn to the method of using the corresponding apparatus claimed in claims 61 and 62. Therefore method claims 82, 83, 88 and 91 correspond to apparatus claims 61 and 62 are rejected for the same reasons of anticipation as used above.

22. Claims 50 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al. (U.S. Patent 5,537,387) in view of Kozuka et al. (U.S. Patent 6,466,735).

Ando teaches an optical recording medium very similar to that of the instant invention. For example, Ando teaches the following:

(a) as in claim 50, the hybrid identification information comprises information indicating a presence or absence of the writable storage area (Fig. 4; TOC in table 2 includes the writable storage area's starting address).

However, Ando does not teach the following:

(a) as in claim 50, information on a part version of the hybrid disc.

Kozuka teaches the following:

(a) a part version indicating a version number of the optical recording medium (column 7, line 36).

Information or programs stored in a DVD disc such as Kozuka's can be renewed or updated. For the benefit of verifying

the difference of stored information, it would have been obvious to one of ordinary skill in the art to include a version number of the disc similar to Kozuka's, because the version number can be used to alert a user when the disc is being edited/updated.

23. Method claim 71 is drawn to the method of using the corresponding apparatus claimed in claim 50. Therefore method claim 71 corresponds to apparatus claims 61 and 62 are rejected for the same reasons of anticipation as used above.

24. Claims 51, 64, 72 and 87 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al. (U.S. Patent 5,537,387) in view of Kozuka et al. (U.S. Patent 6,466,735).

Ando teaches an optical disc very similar to that of the instant invention. For example, Ando teaches the following:

(a) as in claims 51, 64, 72 and 87, the recording and/or reproducing unit records the first control information (TOC in a lead-in area) using reserved bytes of physical format information (Fig. 4; table 2 in columns 6 and 7).

However, Ando does not teach the following:

(a) as in claims 51, 64, 72 and 87, the recording and/or reproducing is according to a digital versatile disc (DVD) specification.

Kozuka teaches a lead-in area in a DVD-ROM disc (Fig. 6).

A traditional optical storage medium such as Ando's magneto-optical disc cannot fully display its contents to a user. Hence, when there is a need for managing files stores in the disc, it would have been obvious to one of ordinary skill in the art at the time of invention to replace Ando's CD-magneto composite disc with Kozuka's hybrid DVD. As a result, data format stored in Ando's CD-magneto disc would have been converted to Kozuka's DVD format such as adding control information in a lead-in area so that contents of the stored information can be better controlled than the previous stored format.

25. Claims 58, 60, 78, 80 and 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al. (U.S. Patent 5,537,387) in view of Kozuka et al. (U.S. Patent 6,466,735).

Ando teaches an optical disc very similar to that of the instant invention. However, Ando does not teach the following:

(a) as in claim 58, the physical format information for the read-only storage area comprises book type information indicating that the optical recording medium is compatible with a digital versatile disk read-only memory (DVD-ROM) specification; and

(b) as in claim 58 and 60, a part version indicating a version number of the optical recording medium.

Kozuka teaches the following:

(a) a book type information indicating that the optical recording medium is compatible with a digital versatile disk read-only memory (DVD-ROM) specification (Fig. 23, step S33; book type information is a program file such as the navigation file of the DVD-ROM); and

(b) a part version indicating a version number of the optical recording medium (column 7, line 36).

For navigating the contents of a data storage medium, it would have been obvious to one of ordinary skill in the art to replace Ando's storage medium with Kozuka's DVD-ROM disc, because the DVD-ROM type disc has a data storing specification which includes program titles and language choices. Such specification has a purpose of better file management so that the contents of the stored information can be viewed like a book.

On the other hand, information or programs stored in a DVD disc such as Kozuka's can be renewed or updated. For the benefit of verifying the difference of stored information, it would have been obvious to one of ordinary skill in the art to include a version number of the disc similar to Kozuka's, because the version number can be used to alert a user when the disc is being edited/updated.

26. Method claims 78, 80 and 89 are drawn to the method of using the corresponding apparatus claimed in claims 58 and 60.

Therefore method claims 78, 80 and 89 correspond to apparatus claims 58 and 60 are rejected for the same reasons of anticipation as used above.

27. Claim 69 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al. (U.S. Patent 5,537,387) in view of Mine (U.S. Patent 6,243,338).

Ando teaches a method of recording reproducing data onto/from an optical recording medium very similar to that of the instant invention. However, Ando does not teach the following:

(a) as in claim 69, a defect management zone and a drive test zone.

Mine teaches at least one defect management zone (DMA 1&2) and a drive test zone (Fig. 2; column 6, lines 1-8).

A rewritable storage medium has defective data sectors caused by occasional bad recording surfaces and scratches on the storage area. Therefore, it is necessary for a rewritable disc to prepare a list of bad sectors during a write-test process in order to verify whether a recording sector is good or bad. Hence, it would have been obvious to one of ordinary skill in the art at the time of invention to include defect management zone and drive test zone in Ando's lead-in area similar to Mine's,

because by including the defect management zone and drive test zone in Ando's lead-in area, the reading/writing of data from/on a sector without knowing its condition before can be prevented.

28. Claim 93 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al. (U.S. Patent 5,537,387) in view of Kozuka et al. (U.S. Patent 6,466,735).

Ando teaches an optical recording method very similar to that of the instant invention. For example, Ando teaches the following:

- (a) as in claim 93, a read-only (ROM) storage area 31 having a lead-in area 34 and a data area 33 (Fig. 4);
- (b) as in claim 93, a writable (RAM) storage area 32 having a lead-in area 36 and a data area 35 (Fig. 4);
- (c) as in claim 93, the lead-in area 34 of read-only storage area 31 comprises a first control information for the read-only storage area 31 and the writable storage 32 (Fig. 4; TOC is the control information; column 6, lines 34-50);
- (d) as in claim 93, reading the first control information from the lead-in area of the read-only (ROM) area (Fig. 4);
- (e) as in claim 93, controlling the data in the read-only area and the writable area based upon the read first control information (Fig. 4).

However, Ando does not teach that the read-only area is a DVD-ROM and the writable area is a DVD-RAM.

Kozuka teaches an optical disk having a DVD-ROM layer and a DVD-RAM layer (Fig. 2C).

Storage media such as Ando's CD and MO are very slow and each has very limited storage capacity. In order to improve the access time and storage capacity Ando's recording medium, it would have been obvious to one of ordinary skill in the art to use Kozuka's DVD-ROM and a DVD-RAM type recording medium to replace Ando's CD and MO respectively, because the replaced DVD type recording medium has advantages of fast access time and large storage capacity over the original CD type recording medium.

29. Claim 94 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al. (U.S. Patent 5,537,387) in view of Kotoku et al. (U.S. Patent 6,466,735) and Mine (U.S. Patent 6,243,338).

Ando teaches an optical disc very similar to that of the instant invention. For example, Ando teaches the following feature in addition to the above claim 93:

(a) as in claim 94, the writable area having a connection zone which connects the read-only storage area and the writable

storage area (Fig. 4; TOC indicates recording positions; column 7, lines 51-54).

However, both Ando and Kozuka do not teach the following:

(a) as in claim 94, the writable storage area having defect management information.

Mine teaches at least one defect management zone DMA 1&2 (Fig. 2; column 6, lines 1-8).

A rewritable storage medium has defective data sectors caused by occasional bad recording surfaces and scratches on the storage area. Therefore, it is necessary for a rewritable disc to prepare a list of bad sectors during a write-test process in order to verify whether a recording sector is good or bad. Hence, it would have been obvious to one of ordinary skill in the art at the time of invention to include defect management information in Ando's writable lead-in area similar to Mine's, because by including the defect management information in Ando's lead-in area, the reading/writing of data from/on a sector without knowing its condition before can be prevented.

Allowable Subject Matter

30. Claims 17, 18, 55, 56, 76 and 77 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

31. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

As in claims 17, 55 and 76, the prior art of record fails to teach or fairly suggest the following features:

(a) the physical format information for the writable storage area is stored in bytes 1024 through 2047 of the first control information.

As in claims 18, 56 and 77, the prior art of record fails to teach or fairly suggest the following features:

(a) the physical format information for the read-only storage area is stored in bytes 0 through 16 of the first control information and the hybrid disc identification information is stored in bytes 17 and 18 of the first control information.

The features indicated above, in combination with the other elements of the claims, are not anticipated by, nor made obvious over, the prior art of record.

Prior Art

32. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Horita (6,469,965) is pertinent because Horita teaches a Hybrid disc.

Igarashi et al. (5,825,734) is pertinent because Igarashi teaches a management table recorded in a MD.

33. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action

34. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks Washington, D.C.
20231 Or faxed to:

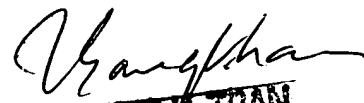
(703) 872-9306 (for formal communications intended for
entry. Or:

(703) 746-6909, (for informal or draft communications,
please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park
II, 2021 Crystal Drive, Arlington. VA., Sixth Floor
(Receptionist).

Any inquiry of a general nature or relating to the status of
this application should be directed to the Group receptionist
whose telephone number is (703) 305-4700.

Any inquiry concerning this communication or earlier
communications from the examiner should be directed to Kim CHU
whose telephone number is (703) 305-3032 between 9:30 am to 6:00
pm, Monday to Friday.


THANG N. TRAN
PRIMARY EXAMINER

cc 3/22/04
Kim-Kwok CHU
Examiner AU2653
March 22, 2004

(703) 305-3032